

REMARKS/ARGUMENTS

Independent claim 1 requires "...a Ti thin filmed position under the $(\text{Co}_{82}\text{Cr}_{18})_{100-x}\text{Pt}_x$ alloy thin film...". Independent claim 3 requires "...a Ti thin film layered on the glass substrate..." and "...a $(\text{Co}_{82}\text{Cr}_{18})_{100-x}\text{Pt}_x$ alloy thin film containing 1 to 14 atom% Pt, which controlled by a CoCr alloy target having a Pt chip positioned thereon and deposited on the Ti thin film...".

The examiner in his rejection on Page 2 paragraph 2 acquiesces that the Okamoto et al. reference fails to teach a Ti underlayer. The examiner relies on Chang et al. to teach the functional equivalence between Cr and CrTi. The examiner therefore concludes that the claims as currently pending are rendered obvious by this combination of references. Applicants respectfully traverse the examiner's rejection. Both claim 1 and claim 3 require "a Ti thin film positioned under the $(\text{Co}_{82}\text{Cr}_{18})_{100-x}\text{Pt}_x$ alloy thin film". The claims are not open to a CrTi film. The claims specifically set forth "a Ti thin film".

The examiner has shown no equivalence between Ti and Cr or between Ti and CrTi. In fact, for the reasons set forth hereinbelow, a Ti underlayer is not the functional equivalent of a CrTi underlayer.

A underlayer is used for inducing crystallographic orientation of deposited magnetic thin film thereon. Therefore, if a material used for underlayer is different, the crystallographic orientation of deposited magnetic thin film thereon is different. As a magnetic thin film is the essential component in a magnetic recording medium, magnetic anisotropy hinged on the crystallographic orientation is the fundamental property in connection with recording density and so on. The difference of magnetic anisotropy of magnetic thin film results from the difference of material used for underlayer, thus the difference of material used for underlayer is very important in

determining the specific character of magnetic recording medium.

As disclosed in Chang, if Cr and CrTi is used for the underlayer, the deposited magnetic thin film(Co-based alloy) exhibits a Cr[200] crystallographic orientation in alignment parallel with the layer plane. That is, the deposited magnetic thin film has the in-plane magnetic anisotropy.

Compared with Chang, Ti is used for the underlayer in the present invention and the deposited magnetic thin film(CoCrPt) exhibits a Co[002] crystallographic orientation in alignment perpendicular with the layer plane. That is, the deposited magnetic thin film has the perpendicular magnetic anisotropy.

Therefore, Ti-underlayer isn't the functional equivalent of CrTi-underlayer because of exhibition of the different crystallographic orientation.

As a result, the present invention is different from Okamoto in view of Chang in aspect of the magnetic anisotropy, the magnetic and structural property of the magnetic thin film. And the magnetic thin film having in-plane magnetic anisotropy never shows uniform local coercivity distribution of the above application. The references fail to teach the use of a Ti underlayer and this no motivation of the substitution of a Ti-underlayer. Therefore, Claims 1-2 are patentable over Okamoto in view of Chang. Claims 3-4 further comprise a thin film in Claim 1. Thus Claims 3-4 are also patentable over Okamoto in view of Chang and further in view of Ishikawa.

In light of the foregoing, it is respectfully submitted that the examiner's rejection is in error and should be withdrawn and an early Notice of allowance should issue.

An earnest and thorough attempt has been made by the undersigned to resolve the outstanding issues in this case and place same in condition for allowance. If the Examiner has any questions or feels that a telephone or personal interview would

be helpful in resolving any outstanding issues which remain in this application after consideration of this amendment, the Examiner is courteously invited to telephone the undersigned and the same would be gratefully appreciated.

It is submitted that the claims as amended herein patentably define over the art relied on by the Examiner and early allowance of same is courteously solicited.

If any fees are required in connection with this case, it is respectfully requested that they be charged to Deposit Account No. 02-0184.

Respectfully submitted,
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I, Rachel Piscitelli, hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on September 14, 2006.

